A Case Study on the Usage of Generative Artificial Intelligence Tools at a University in Thailand and its Ethical Implications

Sanjay Bhardwaj* and Robert McKenzie

Silpakorn University International College, Silpakorn University, Bangrak, Thailand
*Corresponding author, E-mail: Bhardwaj_s@suic.su.ac.th

Abstract

The development of artificial intelligence in education (AIED) has the power to change education and impact every person's role in the process. AIED applications have been steadily embraced in recent years to improve learning performance and experiences whilst also advancing the perception of students' learning. However, using AIED has raised questions and concerns related to various ethical issues, including learner autonomy and personal data. The discussion centers on the fundamental ideas supporting moral AIED, in the light of standards for reliable and moral AIED. Accordingly, the researchers characterized the usage of Artificial Intelligence (AI) at an educational institution in Bangkok, Thailand, along with the potential opportunities and ethical concerns presented by AI in education. Additionally, ethical policies and standards for AIED were examined and synthesized through the process of thematic analysis to consider ethical principles for both educators and students. The research centered on a comparative approach to consider how teachers and students used AI for their teaching and learning processes, ultimately revealing their viewpoints on the need for regulation. This paper aims to support all those involved in education, from teachers to students, politicians, technology developers, and institutional decision-makers in understanding the current usage of Generative AI tools at a higher education institution in Bangkok. It is anticipated that the findings will help educational stakeholders create ethical guidelines in applying morally sound AIED and also stimulate the creation of relevant impact studies in the future.

Keywords: Generative Artificial Intelligence Tools; University in Thailand; Ethical Implications; Privacy; Data Protection

1. Introduction

In 1956, experts at the Dartmouth Conference of the Ivy League in the United States coined the term artificial intelligence (AI) as machines, particularly computer systems, began to simulate human intelligence processes. A few specific uses of AI development included expert systems, machine learning, speech recognition, and natural language processing. With the increased excitement surrounding artificial intelligence (AI), businesses rushed to emphasize how their goods and services could leverage this kind of new technology.

Artificial Intelligence works on the premise of checking data trends and using this information to create learning patterns. In doing so, it is possible to make predictions based on the algorithms it produces. Typically, AI can enable computers to solve problems and perform tasks that humans would normally be required to do, such as writing sentences, searching for information, or having human-like conversations through chatbots. Generative AI, for example, has developed so quickly using generative models that its level of realism is frighteningly good in terms of producing art, music, photos, graphics, and written texts. As AI continues to develop at an incredibly fast rate, Laskowski (2023) identified its main roles in demonstrating cognitive abilities:

1. Learning: As AI gathers information, it creates this data into algorithms which are then turned into useful knowledge, providing computing devices with instructions on how to carry out a certain activity step by step.

2. Reasoning: This is the part of AI programming that is concerned with choosing the algorithm that best fits the identified task to achieve the desired goal.

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3. Self-correction: AI programming is continuously correcting the algorithms so that the results will be as accurate as possible.

4. Creativity: This is the role of the neural networks, rules, and statistics to develop new ideas, images, and text amongst others.

The rapid growth in AI usage prompted the United Nations to create several ethical guidelines on a worldwide basis. On November 25, 2021, UNESCO's 193 member nations developed and signed an agreement on global AI ethics standards in response to this demand (United Nations Educational, Scientific and Cultural Organization, 2021). While recognizing the "deep and dynamic" effects of AI, it also highlighted the growing risks to ecological, social, and cultural diversity.

The field of education has also seen a dramatic increase in the use of AI and, to some extent, incorporated artificial intelligence into pedagogy. The application of AI in education has been recognized as one of the century's most significant innovations thus far (Becker, 2017; Seldon & Abidoye, 2018), and the COVID-19 epidemic only helped raise the demand for AI usage. However, as the field of AI for education (AIED) expands rapidly, little is known about the appropriate or trustworthy guidelines for its ethical usage across education. Addressing ethical guidelines is still widely being explored but educators must devise and apply suitable contemporary ethical frameworks for the evolution of AI. In light of the COVID-19 pandemic's effects on society, education, and the usage of digital technology (Council of Europe, 2021), investigating the relationship between AI and education is extremely relevant at this time.

Raiz (2023) discusses the benefits of AI to a student's education, including the potential to provide personalized learning, a plethora of learning materials, enhanced engagement and collaboration, instant feedback, convenience and efficiency, future-ready planning, and new career opportunities with AI. However, Raiz also warns of various concerns regarding students using AI, including privacy concerns and data collection, an over-reliance on AI tools, unfair access of those that do not have access to technology and the internet, plagiarism, decreased human interaction, loss of conventional teaching methods, issues of depersonalized learning and lacking a personal human touch, and very little governmental regulation.

Flexible approaches are required because of the substantial ethical issues posed by the complexity and intelligence of technology. Maintaining flexibility and recognizing human values are crucial for fostering sustained progress in AI development. AI can evaluate students' strengths and shortcomings, pinpoint areas in which they require development, and customize learning resources to meet each student's specific requirements. Learning becomes more efficient and interesting when students receive the appropriate amount of challenges and assistance, which is ensured by this individualized method (Suk, 2023). Realistically though, it is neither appropriate nor desirable to create and regulate AI technology in all situations using a laissez-faire or one-size-fits-all strategy.

The morality of misusing data to make decisions across a range of sectors (Reddy, Sharma, & Chaudhary, 2022) is a topic of continuous controversy in the academic community (Tambe, Cappelli, & Yakubovich, 2019). Consequently, academic and international organizations are focusing on ethical issues of artificial intelligence in education and providing appropriate rules and regulations across their institutions (Holmes et al., 2022). This case study, therefore, aims to contribute to the discussion by researching AI usage at a specific higher educational institution in Thailand and highlighting the needs of both students and educators in this area.

2. Objectives

AI provides exciting new possibilities and solutions for education as it can help facilitate the learning process and assist students more effectively in managing their workload. These tools can also help teachers with grading and other responsibilities, freeing up more time for teaching. Therefore, the objectives of this study are as follows:

1) To investigate the usage of Generative AI tools for an educational organization

2) To determine whether ethical guidelines are required for using Generative AI tools in educational environments

3) To contribute to the discussion on the general usage of AI in higher education

3. Materials and Methods

3.1 Data collection

The purpose of this paper is to present a comprehensive review of current applications of artificial intelligence in education (AIED) with a case study approach, which has the power to change education and impact each individual's role in the process. However, using AIED has raised questions and concerns related to various ethical issues, including learner autonomy and personal data. Thus, the fundamental idea of AIED and the ethical issues surrounding its usage were investigated by discussing existing literature in relevant academic journals identified via Scopus, Web of Education Science, Research Gate, and Google Scholar, as well as news reports and national government policy papers.

Additionally, quantitative research was conducted in the form of a questionnaire to investigate the objectives of this paper and the usage of Generative AI tools in an educational institution in Bangkok. Critical analyses of data were collected from students and educators at a university in Bangkok to help understand the second objective of discovering the ethical implications of using Generative AI Tools in an educational environment. All participants were guaranteed anonymity and were aged 18 or older. The questionnaire was based on a guide to developing an AI policy at an educational institution by AI for Education (2023). The guiding questions from this included the following:

- How are students and teachers using Generative AI?
- What has been the impact of the release of GPT and other Generative AI tools on your school?
- What are your biggest concerns about Gen AI?
- What are the major ethical concerns your school has about Gen AI?

3.2 Data analysis

The questionnaire was administered in paper form to a university in Bangkok (not the same university as the researchers, and the university's name was withheld for ethical purposes). Quantitative data were collected and analyzed according to 11 open-ended and closed questions based on the AI for Education (2023) guide for developing an AI policy for schools. The questions were presented to bachelor's degree students only and educators regarding the types of Generative AI tools currently in place, proposed usage of AI, perceived need, and their confidence regarding ethical issues with the implementation of advanced AI technologies. This would allow the data to be analyzed through a comparative approach by raising any ethical concerns and ultimately contributing to the final objective of this paper by discussing the general usage of AI in higher education.

4. Results and Discussion

The results of the first question demonstrated the age range of the respondents.

Table 1: Age group of respondents

Age	Number of respondents	Percentage
18-20	12	13.8
21-25	22	25.3
26-30	13	14.9
31-35	24	27.6
36- above	16	18.4
Total	**87**	**100**

In total, there were 87 respondents in age groups ranging from 18 to 20 (13.8%), followed by 21 to 25 (25.3%), 26 to 30 (14.9%), 31 to 35 (27.6%), and 36 and above (18.4%).

Table 2 shows the participants' professions and levels of education, which were the second and third questions on the questionnaire, respectively. As both students and educators were given the questionnaire, it was important to put the respondents into two separate groups to better understand how each group was using Generative AI tools to address the first objective of this study.

Table 2: Educational level of participants

Educational level	Number of respondents	Percentage
Bachelor's degree (students)	52	59.8
Master's degree (teachers)	35	40.2
Total	**87**	**100**

There was a higher number of respondents for bachelor's degree students than teachers, but this was to be expected considering the higher number of students to teachers at universities.

The first objective of this study was to uncover how Generative AI tools are being used at a university. Therefore, the fourth question asked participants about which Generative AI tool they favored the most, as several applications have become widely available by the end of 2022, including the much-publicized free-to-use Chat GPT.
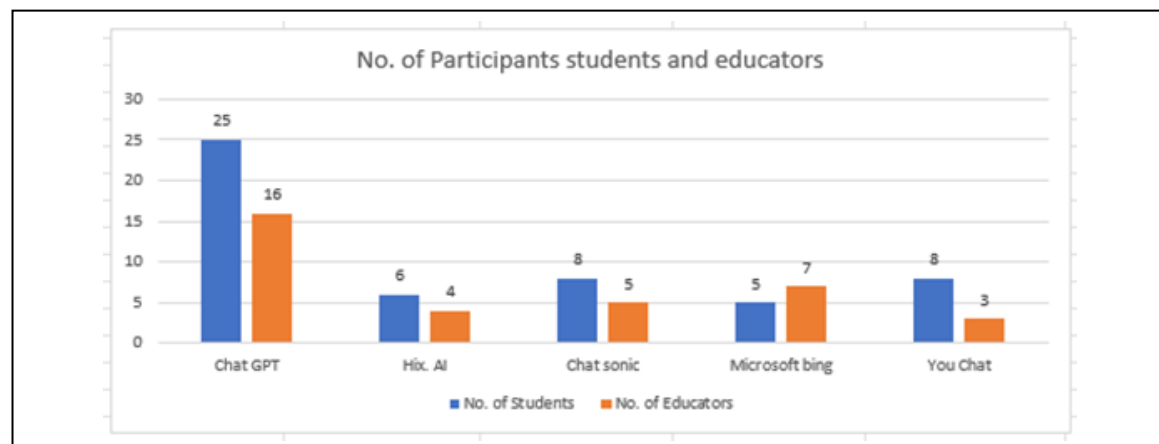
Figure 1: AI Tools favored for educational purposes

The results confirmed "Chat GPT" as the most popular AI tool for both students and teachers. Students rated this more highly at 48.10%, followed by "Chatsonic" at 15.40% and "You Chat" with the same percentage. Educators also rated "Chat GPT" as the most favorable AI tool at 45.70% but identified Microsoft Bing as their second favorite tool at 20%.

The fifth question investigated how often participants used Generative AI apps for educational purposes. Of the 87 participants, 66.7% used them often, 18.4% used them seldom, 11.5% used them infrequently, and 3 (3.4%) said they did not use them. To what levels the participants used AI tools was the sixth question, with respondents answering how much they depended on AI in their daily lives. Of the 87 respondents, 41.4% used AI apps frequently, 36.8% used them seldom, 17.2% used them infrequently, and 4.6% had never used them. This showed how quickly AI has developed as an educational tool in such a short period. For example, Chat GPT was launched on 30th November 2022 and, in just over one year, nearly all respondents stated that they used it in some form or other to help them.

The questionnaire's focus then turned to the participants' perceived reliance on Generative AI technology at the expense of autonomous cognition. Of the 87 responses, 28.7% thought they were only slightly dependent on it, while 71.3% said they were more dependent. Only 12.6% thought that using AI tools for education had made them more innovative and mentally active, whereas 87.4% stated that it had made

them less creative and mentally inactive. However, whilst many respondents felt that it was making them less creative, 74 respondents (85%) thought that AI could help them be more creative, and only 14.9%, thought that it would be ineffective. These findings indicate that participants feel as though they are not using AI to its full potential and therefore not using it effectively for creative reasons.

The research then turned to the second objective of this paper by trying to understand the types of educational activities for which the participants were using Generative AI and whether they raised any ethical implications. The results uncovered some very interesting differences between students and educators, who were using Generative AI for different purposes. Perhaps understandably, students were using it to help them with their assigned tasks, whereas educators were using it to help them check work and for research purposes.
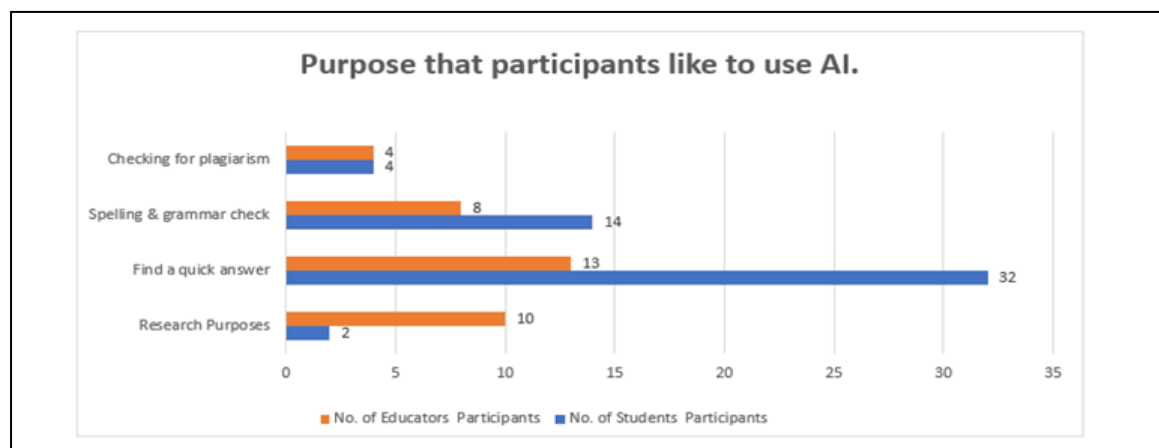
Figure 2: Educational reasons for using AI

Whilst students were mainly using Generative AI tools to provide short answers (61.5%), only 26.9% were using it to help them with grammar and spell checks. Alternatively, educators were not only using it to help create short responses (37.10%), but also to help in the process of research and finding information (28.60%). The data provided by this question certainly highlights some of the ethical issues surrounding Generative AI usage in education, as it demonstrates that students are using it to help provide answers for assigned work. However, further investigation would be required to understand the extent of the answers being provided by AI, especially in areas such as evaluated tasks. Perhaps as the eleventh question reveals, both educators and students are aware of it being used in ways to complete work set by teachers, which raises issues of students using AI to provide answers or complete assignments for them.

For this very reason, the final question delved further into the area of ethics by asking participants if they believed that the use of AI in educational environments required regulation at the national level by the Ministry of Education.
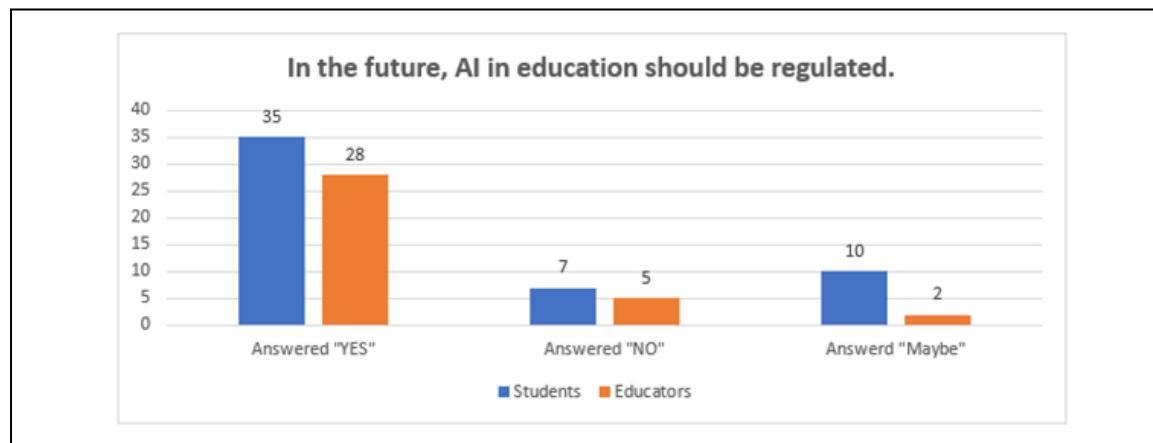
Figure 3: Opinion on regulating AI usage in education

Interestingly, both students and educators felt that there was an overwhelming need to develop regulations concerning the usage of AI in educational institutions, with 67.30% of students answering "yes" to this question, and 80.00% of educators answering the same. This response demonstrated that both students and educators, whilst aware of the benefits of AI in education, were concerned about the unethical aspects of using AI to help answer or write assigned tasks.

The results of the questionnaire at a university in Bangkok identified a pattern of responses between students and educators. The majority of participants used AI tools to assist them with the teaching and learning process, with over 60% depending on AI daily. Although many understood the benefits of AI, there was a large proportion that felt they were not using it appropriately to aid the cognitive process or using it creatively. This also implies that educators need training in AI tools to apply them effectively in their teaching process, which could become more personalized and ultimately help prepare students for their future careers.

As highlighted by the US Department of Education (2023), AI can also help teachers with planning and administrative tasks as well as freeing up additional time to focus on their teaching. The findings from this research show how AI has exploded onto the educational scene in such a short period, with more people now using AI to assist them albeit for slightly different purposes. Despite its increasing popularity, however, the majority of participants from both groups expressed their concerns regarding its usage and the ethical implications surrounding it. Respondents felt that better guidance is required by national governments to implement national policies and thereby regulate their application in educational settings. Thus, they seek clearer policies regarding its usage, and these findings help contribute to the overall discussion of the general usage of AI in higher education, which was the final objective of this paper.

5. Conclusion

Because AI evolves at such an incredibly fast pace, it will be extremely challenging for policymakers to regulate the education industry on a set of defined rules. Imaginably, any particular rule or regulation could become outdated within a short period. Currently, educational institutions are devising guidelines based on various international organizations such as the United Nations and AI for education. For example, the Department of Education (2023) in the United Kingdom recently drafted a white paper on the use of Generative AI to set out a position for educational institutions and help the UK implement the next generation of safe AI. The paper outlines understanding Generative AI, opportunities for the education sector, using AI effectively, limitations of generative AI tools, protecting data for pupils and staff, data privacy, intellectual property, AI in formal assessments, and using AI for the future knowledge and skills of students.

Around the world, many educational institutions are rushing to create their own AI guidelines without national regulations to help guide them. However, there are two important aspects required in formulating AI regulations: To understand the strengths and weaknesses of AI as outlined by Raiz (2023) and to ensure that data is kept private and safe. These factors were supported by the participants' responses during

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this research. Government agencies in Thailand, such as AI Thailand (2022), are helping to promote the use of AI through the Thailand National AI Strategy and Action Plan (2022-2027). However, there are still many ethical issues that need to be addressed at the ground level. Providing a framework for national guidelines in education would help educational institutions construct their institutional policy to work within and provide consistency across the sector.

Another issue regarding the usage of AI in educational institutions is that educators need training to help implement AI effectively in their teaching and administrative responsibilities. There is also a consideration to students at institutions in Thailand (or indeed in other countries around the world), who do not have access to the internet or this kind of advanced technology. Whilst this study focused on just one institution in Bangkok, there is a much greater need for additional in-depth studies to be conducted, which would provide a more detailed understanding of AI usage across different educational systems in countries with different levels of economic development. However, this research also discovered that, from an ethical perspective, there is some confusion amongst educators and students on how Generative AI tools should be used in a teaching and learning setting. Therefore, providing clearer national AI guidelines for education would help provide an appropriate framework for institutions to work within and apply ethical standards accordingly.

6. Acknowledgements

7. References

AI for Education. (2023). Guide to developing an AI policy for your school. Retrieved February 1, 2024, from https://www.aiforeducation.io/ai-resources/ai-policy-guide-school.

AI Thailand. (2022) Thailand national AI strategy and action plan (2022 – 2027). Retrieved January 10, 2024, from https://ai.in.th/wp-content/uploads/2022/12/2022-NAIS-Presentation-eng.pdf

Becker, B. (2017). Artificial Intelligence in Education: What is it, where is it now, where is it going? Ireland's Yearbook of Education 2018, pp. 42-46.

Council of Europe (2021). Convention on AI and human rights (CoE process). Retrieved January 15, 2024, from https://dig.watch/processes/convention-on-ai-and-human-rights-council-of-europe-process.

Department for Education. (2023). Generative Artificial Intelligence (AI) in education. Retrieved February 8, 2024, from https://www.gov.uk/government/publications/generative-artificial-intelligence-in-education/generative-artificial-intelligence-ai-in-education.

Holmes, W., Porayska-Pomsta, K., Holstein, K., Sutherland, E., Baker, T., Shum, S. B., ... & Koedinger, K. R. (2022). Ethics of AI in education: Towards a community-wide framework. International Journal of Artificial Intelligence in Education, 1-23.

Laskowski, N. (2023). Artificial Intelligence (AI). Retrieved January 20, 2024, from https://www.techtarget.com/searchenterpriseai/definition/AI-Artificial-Intelligence

Raiz, S. (2023). Should Students Be Using Online Tools and AI To Study? Retrieved January 10, 2024, from https://elearningindustry.com/should-students-be-using-online-tools-and-ai-to-study.

Reddy, P., Sharma, B., & Chaudhary, K. (2022). Digital literacy: a review in the South Pacific. Journal of Computing in Higher Education, 34(1), 83-108.

Seldon, A. & Abidoye, O. (2018). The fourth education revolution: Will artificial intelligence liberate or infantilize humanity. Retrieved January 10, 2024, from https://www.google.co.th/books/edition/_/Tj-eDwAAQBAJ?hl=en&sa=X&ved=2ahUKEwiRueq-yO6DAxW71DgGHc9RALoQ7_IDegQIEBAC.

Suk, J. (2023). Seven Roles of Artificial Intelligence in Learning and Development. Retrieved January 20, 2024, from https://www.hurix.com/role-of-artificial-intelligence-in-learning-and-development.

Tambe, P., Cappelli, P., & Yakubovich, V. (2019). Artificial Intelligence in Human Resources Management: Challenges and a Path Forward. California Management Review, 61(4), 15-42. https://doi.org/10.1177/0008125619867910

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United Nations Educational, Scientific and Cultural Organization (UNESCO). (2021). Recommendation on the Ethics of Artificial Intelligence. Retrieved January 15, 2024, from https://www.unesco.org/en/articles/recommendation-ethics-artificial-intelligence

U.S. Department of Education, Office of Educational Technology. (2023). Artificial Intelligence and Future of Teaching and Learning: Insights and Recommendations, Washington. Retrieved February 8, 2024, from https://www2.ed.gov/documents/ai-report/ai-report.pdf